


February 22, 1957

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PROGRESS REPORT

1. AIRPLANE DELIVERIES

FOG Airplanes. The following aircraft have been delivered and are now on flying status with FOG.

361 6 December 56

362 12 December 56

363 19 December 56

364 18 February 57

365 6 February 57

366 31 January 57

Aircraft 367 is being held back for flight test work with C camera. It has had special modifications to provide a dry nitrogen environment for the camera. Remainder of FOG delivery on schedule.

2. STATE OF VEHICLE & COMPONENTS

The 1420H mach sensors are now beginning to arrive and are being installed or sent out as kits. The first production unit is installed in 367. To date it has had better stability with respect to holding preset calibrations.

A modified drag chute release mechanism has given

100% operation on aircraft 366. Kits to be shipped in near future.

The drag chute is highly desirable for flameout landings, on flap landings and operation on short runways. To keep it reliable it should be used occasionally and door opening checked on the daily inspection.

The elevator tab structure and mechanism has been modified to provide more positive and stiffer action. This modification must be completed in order to lift the flight restriction of 220 knots maximum indicated airspeed. This modification is now incorporated on 365, 369 and 370. Aircraft 371 and up will incorporate this modification in manufacture.

Emergency canopy seal pressure release is now incorporated in production starting with Aircraft 368. Kits are currently being sent out.

The speed warning system has also been incorporated in production and kits are in process.

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A redesigned face plate has been delivered to [REDACTED] to replace the MB-2 which has been used to date. The heater circuit of this new plate made no provisions for emergency operation; did not defogg the center portion of the plate during a flight operation and was not compatible to the present aircraft wiring.

As a result of this a program has started to evaluate this face plate. The face plate has been rewired to provide a snap button emergency system. The buttons used are a new improved design which greatly improve ease of pilot operation. The aircraft electrical system has been modified in 367 to be compatible with either the new or the MB-2 face plate. A slight compromise on emergency face heat is made to do this. When the MB-2 is phased out completely the adjustable resistor can be recalibrated to match the new face heat only. This new heater circuit is incorporated on aircraft 368 and up. Kits are in process.

Our flight test to date indicates no face heat troubles. The new face heat in normal mode operates satisfactorily with a 3 o'clock setting on the panel resistor. On emergency mode the new plate could use slightly more power which will be provided when the MB-2 phases out.

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A stall warning strip has been in process of pilot evaluation on most aircraft at [REDACTED] for the last three months. This has resulted in a final configuration eighteen inches long adjacent to the wing fillet. This will appear first on aircraft 371 in production and will be Kit supplied for all other aircraft.

The rear view problem has not yet been resolved. The proposed system which would install in the top of the

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 FLIGHT TEST PROGRAM - 1914 CONTRACT

	SHIP	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
PROD. FLIGHT TEST	ALL A/C 2 @ TIME										
DRIET SIGHT - MK II (NO C CAPABILITY)	368 & 372										
WEATHER PKG FOR 368 (1ST RESEARCH A/C)	368										
[REDACTED]	25X1X4										
RADAR & ASH-A & SYSTEM III	376										
EJECTION SEAT PKG (2ND RESEARCH A/C)	377										
INFRA-RED PKG (3RD RESEARCH A/C)	389										

equipment bay has been derailed because it would not be compatible with all installations and because the results of viewing from such a location are doubtful.

Using the drift sight with a MK III controller would permit looking aft but not quite high enough to see one's own contrails. Two maneuvers will be tried in order to see the contrails.

3. FLIGHT TEST PROGRAM

The chart indicates the current and proposed flight test programs for your aircraft. Individual systems are covered in following pages.

SYSTEM I

Modifications increase sensitivity 20 db for 2 pounds. Power supply new and revise amplifier. Requires more flight test.

SYSTEM III

Antenna design information lagging. Due here on February 28. Means tearing into fin already built for 376.

SYSTEM IV

System IV has not started flight testing as yet. As previously stated we expect to require ten to thirteen flights to test this gear and prove its reliability.

A System IV lower hatch, which is essentially all radome has been delivered. Since delivery, new hatch configuration requirements have been levied by the System IV project. This change is being evaluated because of structural difficulties of the proposed radome configuration. Three System IV hatches have been built. Present weight is 550 pounds, which is 100 pounds overweight.

The basic flight test work here is considered finished as no adverse fogging conditions have been reported since the inclusion of the hatch heater and blower systems. Any incidental testing should be accomplished on the FOG training program.

Note that each B camera requires flight test in order to establish its reliability. This normally requires two or three successful missions.

B's are considered to be work horse of project. Reliability is in question for shutter and film transport.

1. Flexible cassette and light trap are not interchangeable.
2. Film - All spools wound uniformly loose. Film take-up is @ 6 lbs. film spooled @ 3 lbs.
3. 27 flights -- 3 shutter failures.
4. Early October failures were oblique drive gear or motors. Now, new motors.

Two problems here --

1. Be sure film is respooled to correct tension.
2. Hatch delivery is lagging because of lack of glass.

Have received to date enough glass for --

24 A1 hatches

17 B hatches

2 C hatches

This is to satisfy both FOG and the other program.

C CAMERA

The prototype C camera has flown five times to date with test flights scheduled for Tuesdays and Thursdays. Since B camera required six months of flight testing to make it reliable it is logical to assume that C camera will require the same. Thus the schedule shown.

Camera is in process of test for altitude focus. First flight was 4 lines 1 mm. Second flight was 20 lines 1 mm.

Tests for adequacy of nitrogen supply, window cover retention and jettison are running concurrently with the camera tests.

The use of a dry nitrogen pressurized compartment in which to operate this camera has been successful to date in keeping the camera mirrors and hatch windows free of dirt and oil vapor deposit. Because of the large size and stabilization motions of C the inclusion of the nitrogen compartment has been very difficult and means that extremely close coordination must now exist between the camera and aircraft designers in order to eliminate and prevent any future mutual interferences. The aircraft structural and functional components have been pared to the bone in the camera area. Any future camera modifications must stay within the present nitrogen compartment bounds and still provide allowance for stabilization motions.

Each individual C camera will require flight tests in order to establish correct focus and reliability. Since the C camera schedule projects thru the summer some form of

DRIFT SIGHT

The mechanical MK I drift sight operation has improved since degreasing the head and control cables. Tests are to be continued as a part of the C camera program.

The electrical servo MK II drift sight has been tested in two configurations. Neither one has been satisfactory. After a short period of operation the sight does not follow the controller. A third configuration is expected soon. This MK II drift sight as it now stands does not provide capability for the "C" camera. Apparently at the time the MK II was ordered by the FOG group there was no requirement for the "C" camera. Why we ever gave anybody a go ahead to build the MK II without the "C" camera capability being incorporated at that time is difficult to understand.

The prototype MK III drift sight control has been built and flight tested. It was built to give a complete 360° look, to conserve weight, panel space, maintenance time, and to be compatible with all presently used equipment except C cameras.

This prototype MK III controller has been flight tested in order to obtain pilot comments. Some changes have been recommended and incorporated but the general feeling is that even its present form is more desirable than the MK I as a viewer and navigational aid.

APQ-56 & RADAN

The current tests of this combined system indicate that the APQ portion is operational but RADAN is having troubles.

The APQ-56 has been operational by using manual inputs for ground speed and drift. The added accuracy of the RADAN would be desirable but it is not necessary to the mission.

The main RADAN problems of slow track and blown fuses have been traced to a temperature influenced oscillator and a malfunctioning inverter. The correction of these items should produce accurate results.

The Heading Selector designed to wash out pilot heading errors to the APQ-56 has not proven out as expected. It has actually caused more errors than if it was not included. The function of this component has been eliminated and future installations are being wired to eliminate the Heading Selector completely.

RADAN tests will be continued by itself in FOG aircraft 368 and with APQ-56 in FOG aircraft 369. This is contingent upon adequate technicians and test equipment being available.

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